

R E M A R K S

Careful review and examination of the subject application are noted and appreciated. Applicant's representative thanks Examiner Corriellus for the indication of allowable subject matter.

OBJECTION TO THE SPECIFICATION

The objection to the specification has been obviated by appropriate amendment and should be withdrawn.

Specifically, the specification has been amended to recite the limitation in claim 14, step B. Support for the amendment to the specification can be found in the claims as originally filed, for example, claim 14, and in the drawings as originally filed, for example, in FIGS. 4-7. As such, no new matter has been introduced (MPEP §608.01(1)).

CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejection of claims 1 and 5-12 under 35 U.S.C. §103 as being unpatentable over FIG. 1 of the background (hereafter Background) in view of Zhang et al. (U.S. Patent No. 5,600,280; hereinafter Zhang) and in further view of Shearer et al. (U.S. Patent No. 5,126,692; hereinafter Shearer) is respectfully traversed and should be withdrawn.

The rejection of claim 13 under 35 U.S.C. §103(a) as being unpatentable over FIG. 1 of the background (hereinafter

Background) in view of Zhang is respectfully traversed and should be withdrawn.

The Office Action admits that the background does not teach that the VCO has an automatically controlled gain and that it also fails to teach that the gain of the VCO varies in response to a frequency of the spread spectrum clock signal and a function curve for the non-linear gain is generated by a predetermined criteria (see page 3, lines 1-9 in section no. 5 of the Office Action). As such, Background does not teach or suggest all the elements of the presently claimed invention.

Zhang does not cure the deficiencies of Background. Specifically, Zhang is directed to a differential amplifier and variable delay stage for use in a voltage controlled oscillator (Title of Zhang). The cited portion of Zhang reads:

A differential amplifier or delay cell for use in a voltage controlled oscillator comprises a pair of clipper transistors coupled across the output nodes of the amplifier for limiting the voltage swing of the output to a transistor threshold and improving the frequency response of the amplifier. A cross-coupled pair of transistors are included to provide a hysteresis response further improving the noise immunity of the amplifier. A variable control voltage is converted to a current and used to control the frequency of the output signal. An oscillator is formed from three stages, cascaded together, each stage comprising the improved differential amplifier and controlled by a differential reference signal (column 4, lines 12-23 of Zhang).

Contrary to the position taken in the Office Action (see page 3, lines 10-11 in section no. 5 of the Office Action), the cited text from Zhang does not appear to evidence an automatically controlled

nonlinear gain. In particular, the above referenced text appears silent regarding an automatically controlled **nonlinear gain** as presently claimed. Furthermore, Zhang expressly discloses a simulated plot showing the **linearity** for various frequency ranges of a voltage controlled oscillator taught by Zhang (see FIGS. 5-6 and column 4, lines 45-51 of Zhang). Since Zhang is silent regarding an automatically controlled **nonlinear gain** as presently claimed and expressly discloses a simulated plot showing the **linearity** for various frequency ranges of a voltage controlled oscillator taught by Zhang, it follows that Zhang does not teach or suggest each and every element of the presently claimed invention or provide the motivation or suggestion for modifying the background FIG. 1 of the present application (MPEP §2143.01). Therefore, the Office Action fails to factually establish that the combination of Background and Zhang teaches or suggests each and every element of the presently claimed invention as required by MPEP §2142. As such, the presently claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

Shearer fails to cure deficiencies of Background and Zhang. Specifically, Shearer is directed to a variable frequency system having a **linear** combination of charge pump and voltage controlled oscillator (Title of Shearer). Shearer teaches that PLL system designers are concerned about a curvature (or nonlinearity) of a VCO's gain function curve (column 3, lines 1-3 of Shearer).

Shearer further teaches that it is generally desirable to force the characteristic gain curve of the VCO to be as **linear** as possible (column 3, lines 3-6 of Shearer). Shearer further teaches it is an object of the invention of Shearer to provide a charge pump voltage controlled oscillator combination with **a substantially constant transfer function**, even for situations where the voltage controlled oscillator VCO has a nonlinear gain function (column 3, lines 32-36 of Shearer). One of ordinary skill in the field of the invention would recognize **Shearer as teaching that nonlinear gain in a VCO is undesirable.**

Furthermore, one of ordinary skill in the field of the invention would clearly recognize that Shearer teaches a method of compensating through the design of the charge pump for a nonlinear gain in a VCO. Thus, Shearer teaches away from a VCO having a nonlinear gain. Since Shearer teaches away from the desirability of a nonlinear gain in a VCO, it follows that Shearer does not provide the motivation or suggestion for modifying either the background FIG. 1 of the present application or Zhang (MPEP §2143.01). Therefore, the Office Action fails to meet the Office's burden to factually establish a *prima facie* case of obviousness (MPEP §2142). As such, the presently claimed invention is fully patentable over the cited references alone or in combination and the rejection should be withdrawn.

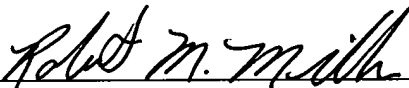
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge our office Account No. 50-0541.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.


Robert M. Miller
Registration No. 42,892
24840 Harper Avenue, Suite 100
St. Clair Shores, MI 48080
(586) 498-0670

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